

## CLAIMS

We claim:

1. A process for producing a fuel gas for a fuel cell which comprises a step of converting hydrocarbons and/or oxygen-containing hydrocarbons to a reformed gas which is  
5 composed principally of hydrogen by an autothermal reforming reaction using an autothermal reforming catalyst which comprises ruthenium supported on a support containing 5 to 40 percent by mass of a cerium oxide or rare earth element oxide which is composed principally of a cerium oxide, 60 to 95 percent by mass of an aluminum oxide, and 0 to 10 percent by mass in terms of metal of  
10 one or more elements selected from the group consisting of an alkaline metal and alkaline earth metal, the atomic ratio of cerium and ruthenium (Ce/Ru) being 1 to 250.
2. The process for producing a fuel gas for a fuel cell according to claim 1 wherein said autothermal reaction is conducted at a catalyst bed inlet temperature of 200 to 800 °C and at a catalyst bed exit temperature of 500 to 1,000 °C.
3. The process for producing a fuel gas for a fuel cell according to claim 1 wherein said  
15 autothermal reaction is conducted at a pressure of atmospheric pressure to 5MPa.
4. The process for producing a fuel gas for a fuel cell according to claim 1 wherein the feed stock to be converted to said reformed gas is selected from the group consisting of methane, ethane, propane, butane, natural gas, LPG, manufactured gas, gasoline, naphtha, kerosene, liquid  
20 fuels having a boiling point within the range of those thereof, methanol, ethanol, propanol, and dimethyl ether.